

# Sonoma Mountain Journal

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*Each issue of the Journal focuses on some aspect of what we value and seek to preserve.*

*This year's issue of the Journal highlights water—where it comes from, where it goes.*

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The first peoples of southern Sonoma county, the Coast Miwok, placed oona-pa'is — Sonoma Mountain — at the center of the world, imagining its summit as an island in the primordial ocean at the beginning of time.

Geologists tell a similar story — that Sonoma Mountain's layers of volcanic and sedimentary rock, pushed upward by tectonic forces, rose from the depths of a shallow sea.

*The mission of Sonoma Mountain Preservation is to preserve the scenic, agricultural and natural resources of Sonoma Mountain; to expand recreational opportunities on the mountain; and to provide a forum for constructive discussion of issues relating to the mountain.*

## Water on the Mountain

Rebecca Lawton and Deanne DiPietro contributed to this piece.

### Geology is destiny

To understand water on Sonoma Mountain, it helps to understand stone. The mountain resembles a layer cake of rocks ranging in age from 10 million years old at the base to 3 million near the top. Over the rocks rests a thin skin of modern river gravels, slumps of loose rocky debris and soil (known popularly as landslides), and oak-fir-redwood woodland in a mosaic whose character depends in part on soil moisture.

The key to water on the mountain is the variability of the geologic and overlying material: some rocks and soils store water better than oth-

ers, some tend to spill it out, and from the latter, surface flow is born (including what we call springs).

It all begins with rainfall. In Sonoma's coastal climate —with cool, wet winters and hot, dry summers and only rare snowfall—most of the 12 to 50 inches of annual precipitation falls as rain. Over 95 percent of rain falls from October to April. Once a raindrop hits the ground, it is taken up by soil or rock, or it is helped by gravity down the mountain as overland flow on slopes or in stream canyons. Rocks and soil hold varying amounts of water depending not only on their innate character but also on steepness of slope and aspect (the compass direction they face).

The mountain consists largely of a geological formation known as the Sonoma Volcanics, which covers nearly half of Sonoma Valley. The formation is highly variable. In the Coast Ranges immediately north of San Pablo Bay, the volcanics comprise both airborne ash consolidated into tuff and flow rocks of varying viscosity from basalt, andesite, and rhyolite lavas.

Also on the mountain is the Glen Ellen Formation, which lies east of the Rodgers Creek Fault (an earthquake fault that runs west of the summit.) The Glen Ellen covers about seven percent of Sonoma Valley and flanks some of the

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## Can Trails Change the World? Maybe!

On a blazing hot Sunday afternoon in August, Tjiska Van Wyk, the executive director of Jack London State Historic Park spoke to a group of SMP supporters about her vision for trails in and around the park. Not surprisingly, she started with Jack himself: "Jack London felt a connection to the land was essential to the human spirit and was horrified by the way previous owners had depleted the soil of Beauty Ranch."

She went on to say, "When the Valley of the Moon Natural History Association (parent organization of the current non-profit park management group) assumed management of the park we made it a top priority to tackle deferred maintenance of trails. We believe the park offers an affordable and accessible opportunity to create meaningful connections to land among a variety of people. Also, ala Jack, we wondered if we might take on a loftier goal."

Tjiska described the ways in which she believes trails can, indeed, change the world:

Trails provide an opportunity for physical exercise, an enjoyable way to combat obesity, coronary disease, high blood pressure and diabetes. Better than gyms, the scenery helps keep you moving and the fresh air provides an added benefit.

They offer peace and relaxation, demonstrated to reduce depression and anxiety, and to enhance spiritual and psychological states in an increasingly complex world.

Trails present experiential learning; when children can touch, see, feel, and smell the outdoors they begin to understand the connec-

tions we humans share with our environment. Trails lead us into understanding the need for clean air and water, the impacts of climate change and how we can help slow it.

Being out on a trail can alter lives; they are accessible, affordable and therapeutic places for youths at risk; taking part in trail work can lead to new vocational skills, leadership, teamwork and improved confidence.



Trails can bring people together on an even social (if not physically level) setting; almost anyone can walk a trail, which can lead to stronger communities.

Trails bring people to parks, which become destinations for residents and those from out-of-town. They are a tourist destination, increasing local revenues at stores, restaurants and other establishments.

**For these reasons, SMP presented a check for \$5000 to the Jack London Park Partners to support their work building and improving trails in the park.**

## Presenting: the East Slope Trail

From information provided by the Press Democrat and the Sonoma County Agricultural and Open Space District

For almost 20 years SMP founder and long time open space advocate Pat Eliot, with her husband Ted, and many others, worked hard to get a trail connecting Jack London Park along the eastern ridge of Sonoma Mountain, running south to their property.

On Sept 24, the Board of Supervisors approved a plan for construction of the trail and awarded a contract to get it done.

It took the collaboration of many agencies, funders, nonprofit partners, volunteers and landowners to complete this portion of the Bay Area Ridge Trail by extending the existing Sonoma Ridge trail – which runs roughly north-west by south east along the southeastern edge of the park - by 1.3 miles to a small loop on property owned by the Eliot Trust. The trail will cross two private properties and one property held in fee by the Open Space District. Plans call for this trail to connect eventually with Petaluma Adobe State Park, the North Slope Sonoma Mountain Ridge Trail and other publicly held land.

History buffs, take note:

In 1995 the District acquired a conservation easement including an offer to dedicate a trail over the Frieberg and Henshaw properties, now owned by Hal Arbit. In 1997 the District acquired a conservation easement over a portion of the Sonoma Developmental Center, and the fee title was subsequently transferred as an addition to JLSP. In 2004 the Eliot Trust donated a conservation easement

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to the District. Finally, in 2010 approximately 22 acres of land adjacent to JLSHP was conveyed in fee by Maria Hansen Trust to the District through a settlement agreement.

Ted Eliot told the supervisors after the vote to approve the trail that he and his wife Pat had been dreaming of seeing the area opened to hikers for more than 20 years.

According to Bill Keene, the trail will cost about \$50,000 for major grading and installation. Much of

the finishing work will be done by volunteers organized by the non-profit Sonoma County Trails Council, at a cost of \$19,500, more than half of which is covered by a grant from outdoor retailer REI.

The trail will be managed by the Valley of the Moon Natural History Association, which stepped in to manage Jack London State Park in 2011 after the state threatened to close it and dozens of parks statewide.

Keene said the new trail could be open as early as next spring, if the

weather cooperates, but certainly no later than the summer. For now it will end in a loop around a wooded spur at the end of the ridge, offering sweeping views down Grave Site Valley to San Francisco Bay and beyond.



When open to the public sometime early in 2014, the new East Slope Trail will run from the existing Sonoma Ridge Trail approximately 1.3 miles south, along the eastern ridge of the mountain. Check the JLSHP website for updates on the trail's completion.

# Water on the Mountain

Continued

Mountain's eastern aquifers. These formations often puzzled early settlers and led to myths created by the mountain's first inhabitants.

## Water wars

Throughout the county, protecting the quantity and quality of groundwater is a key concern. In recent years, pumping depressions (where groundwater is drawn down faster than it is recharged) have developed. Recharging groundwater, that is, replenishing it, occurs primarily from direct precipitation and seepage from creeks into surrounding geologic layers. Recharge is spotty on Sonoma Mountain due to steep slopes and slumped material from which moisture drains quickly.



**Sonoma Mountain plays an important role in the region by catching and holding water and acting as a time-release device for groundwater and stream flow in the surrounding lowlands. Protecting water on the mountain does double-duty: more water for ranches and wildlife on the mountain also means more water for fish and people in the valleys.**

Overtaxing our water supply on the mountain will result in shortages in all areas, potentially leading to disputes and legal actions. Water issues promise to intensify as climate changes: given hotter, drier, longer summers, issues of storage, pumpage, and use are all being re-evaluated and need full attention by all.

## Climate change

A steady change in climate patterns has been underway in our region for about a century. As it gets warmer our summer season grows longer; spring comes earlier. Night temperatures are rising faster than those of summer days. Anecdotal evidence suggests we are experiencing increased droughts and severe storms that cause flooding and trigger landslides like the one that closed Sonoma Mountain Road from 2006 – 2009.

As scientists create models of potential future climate and hydrology for our region, two likely scenarios emerge. Both indicate that it will continue to get warmer but the behavior of rainfall is less predictable. Some models predict we could experience less overall rainfall; others indicate there could be more. Either way, higher temperatures mean higher drought stress on the land during our dry summers.

Plant communities will change, slowly, to habitats more suited to drought: annual grassland and chaparral will dominate where there were once forest and savannah; redwoods and other water-loving plants will survive only in moist "refugia" or areas of less change.

Fires are likely to be more frequent; with fire will come more rapid change, such as erosion and invasive species.

Land stewardship and management practices can help keep water in the streams and soil on the land and increase production of forage for cattle and native species. On rangelands, for example, timing grazing to reduce

soil compaction and encouraging perennial native grass species with deep roots to anchor the soil and feed cattle throughout the year (as opposed to annual grasses with shorter roots) result in bottom line improvements. In some cases streams that were dry in summer now run year-round.

Environmentalist Aldo Leopold defined the Land Ethic as enlarging the boundaries of community to include soils, waters, plants and animals. This change in ethics, he said, is the next step in our evolution. That change is upon us here on the mountain.

## Long, Long Trail to Lafferty

As this issue goes to press, advocates for public access to the Petaluma-owned Lafferty Ranch are meeting with county representatives in an effort to get the county to become a party to the litigation. Earlier this year Judge Elliot Daum determined that the advocates -- Bill Kortum, Matt McGuire, Larry Modell and Bruce Hagen -- did not have standing to bring the suit that would open the property.

With the generous help of pro bono legal counsel, including Petaluma city councilman and lawyer Mike Healy and lawyers Larry King and Pam Asselmeir, the Lafferty Four seek county engagement, preferably as a plaintiff. Since the land at the gate to Lafferty has proven to be county right of way (discovered in an 1868 deed granting the 40 foot right away to the county by the then owner of the Pfendler property) the county engagement is critical. Stay tuned as this very long saga grinds on.



## SMP Throws a Party!



Hostess Marilyn Goode, who graciously opened her pool area for the occasion, and SMP steering committee member Meg Beeler seem pleased with the event in August.



SMP co-founder and activist Mickey Cooke described the history of trails on the mountain where she has ridden horseback for decades.



Ted Eliot and Hope Nisson welcome guests.



District 1 County Supervisor Susan Gorin listened to speakers at the event.



Tom von Tersch provided classical guitar music for the gathering.



Tjiska van Wyk (rhymes with like) and Pat Eliot discuss the future of trails in Jack London State Park.



Chuck Levine, board chair of the Valley of the Moon Natural History Association Park Partnership talks with Ralph Benson, executive director of the Sonoma Land Trust

## Mountain Magic

by Arthur Dawson

*"The way led on...across small dips and canyons, all well wooded and a-drip with water. In places the road was muddy from wayside springs.*

*"The mountain's a sponge," said Billy. "Here it is, the tail-end of dry summer, an' the ground's just leakin' everywhere."*

—Jack London,  
*The Valley of the Moon*

In the beginning, when O-ye, the Coyote Man, landed his boat on top of Oona-pa'is (Sonoma Mountain), he pulled his craft from the ocean, flipped it upside down to let the water run out, and set it so that the long way went from north to south, the narrow way from east to west.

This fragment of a longer tale accounts for the shape of Sonoma Mountain, which resembles an overturned boat, and for the shape of the world, at least in northern California. Geological forces have made our valleys "long from north to south, narrow from east to west."

Extending the image, we might imagine the creeks pouring off Sonoma Mountain—Carriger,

Graham, Yulupa, Crane, Copeland and dozens of others—as rivulets draining from O'ye's boat. Rivulets drawn from the salty ocean, magically purified to run fresh down the sides of the mountain.

As London writes, even at the end of summer, the mountain's springs and creeks continue flowing. Bill Murray, former Glen Ellen fire chief, described how during the drought in the 1970s "people weren't getting much water." Yet near Hayfields, "almost at the top of the mountain, there's a spring. That spring never stopped running all through the drought . . . the pigs used to sometimes get stuck in the mud there."

One resident, who lived in a house on the summit plateau, remembers that near her home was "an unusual spring . . . which had a pipe stuck into it vertically. Out poured gallons of cold, clear water which fed into the old bathtubs for the cattle. It was a magic place."

A spring gushing from the top of a mountain stretches the imagination; it inspired folk tales and explanations. Longtime resident Milo Shepard described how people thought that the water on the upper parts of

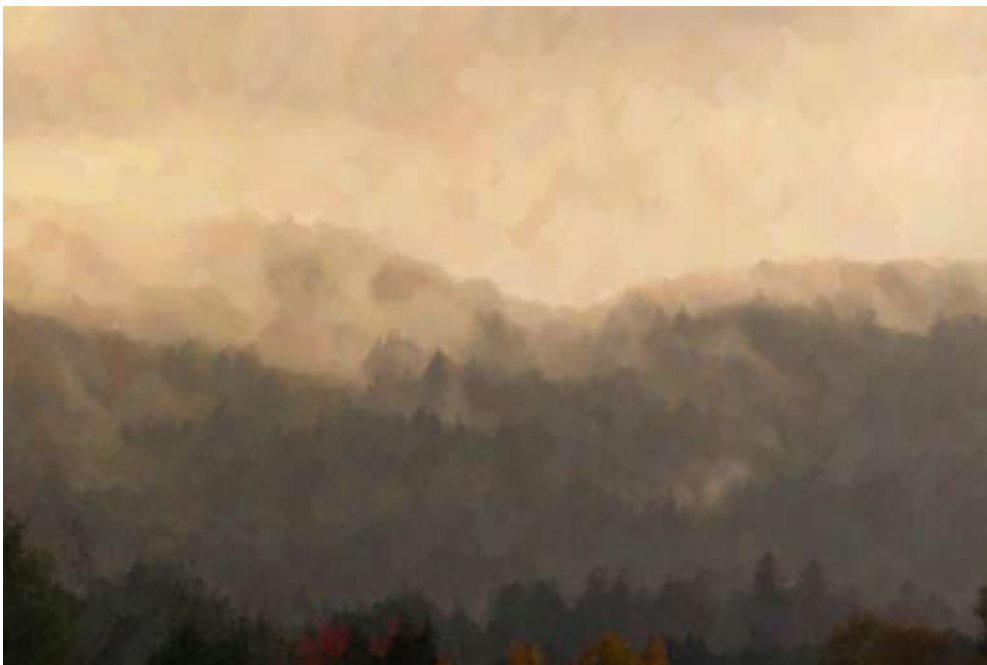
Sonoma Mountain came from as far away as Shasta County. They reasoned that you had "to have a body of water higher to force it up to twenty-one hundred [feet] where these springs are on the top . . ." (see page 1, 'Water on the Mountain,' for the scientific explanation).

London described another mountain phenomenon in his play "The Acorn-Planter." One of the characters notices how, after an earthquake, "springs in some places dry up, and in other places where there were no springs, springs burst forth." Bill Murray also described how the spring supplying Waldruhe Heights went dry after an earthquake.

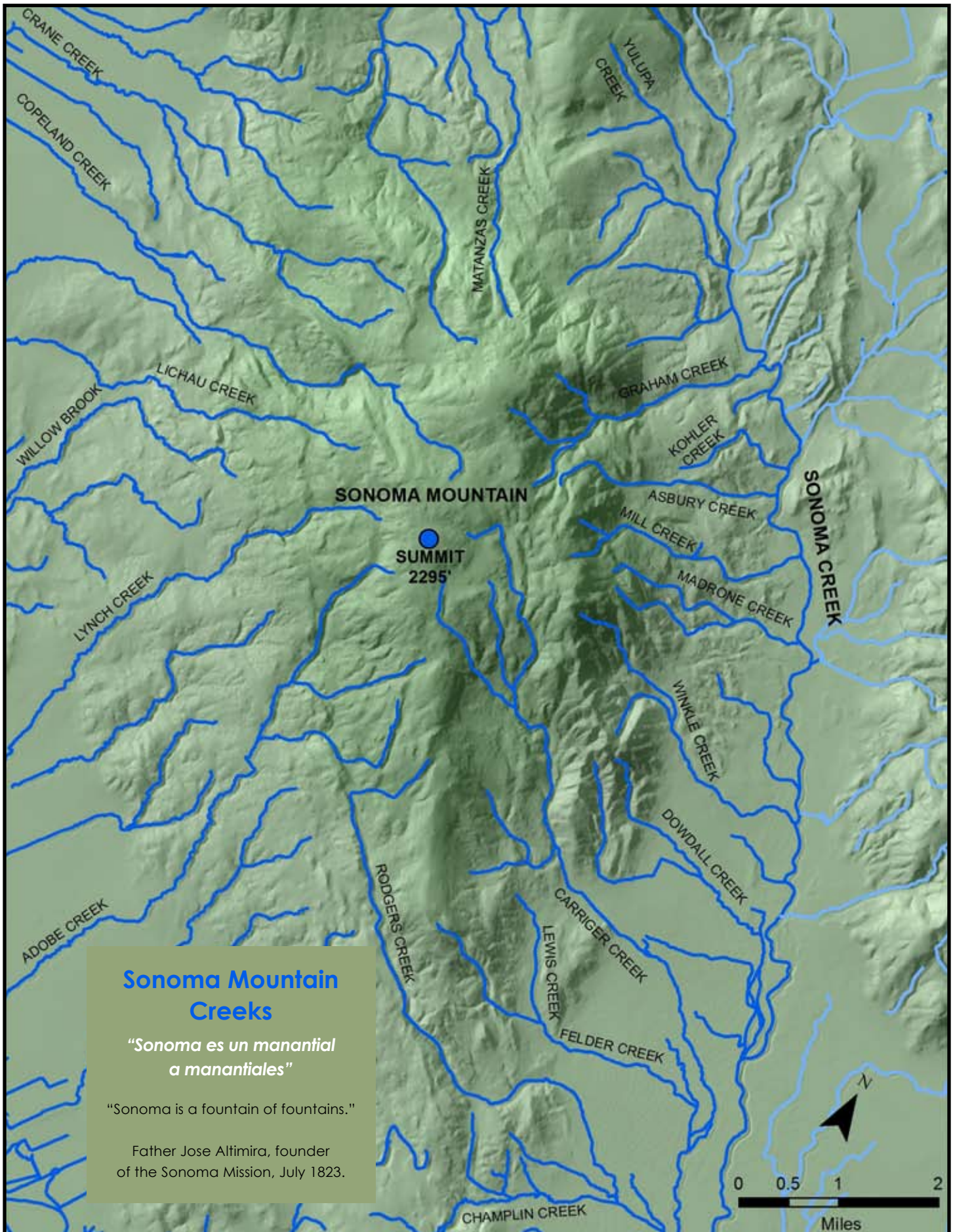
The opposite occurred in 2006. That summer, just before a moderate earthquake shook Sonoma Mountain, at least one creek, which had already gone dry, began flowing again. The additional water from this creek, and others, tripled the flow in Sonoma Creek before slowly declining over several weeks. Tectonic activity seemed to be squeezing the mountain like a sponge.

The mountain has a number of artesian wells—places where the water pressure is high enough to force it to the surface. Milo recalled that "The first underground spring, underground artesian well that was hit was up on Sonoma Mountain was on the Bruning property [Waldruhe area, Sonoma Mountain Road]. It blew the bit out of the ground."

Where can you sample a drink of Sonoma Mountain water? My favorite place is the fountain by the picnic tables near the upper parking lot at Jack London State Park. It comes out cold and fresh, tasting pleasantly of minerals deep underground, of flavors hidden at the heart of the mountain.







## Sonoma Mountain Creeks

*"Sonoma es un manantial  
a manantiales"*

"Sonoma is a fountain of fountains."

Father Jose Altimira, founder  
of the Sonoma Mission, July 1823.

Cartography by Arthur Dawson, Baseline Consulting, Glen Ellen, CA.  
Basemap from Global Precipitation Climate Center & Esri Mapping Service.  
Surface hydrology from U.S. Geological Survey.



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